Virtual As-Builts with GeoAutomation

McElhanney Consulting Services Ltd.

December 21, 2010

Virtual As-Builts with GeoAutomation

GeoAutomation is a mobile digital imagery camera system, providing near 360°, survey-enabled, georeferenced imagery capable of mapping accuracies ranging from GPS quality through to the high accuracy survey requirements demanded in Engineering Road Design. With 14, 2MP, digital cameras, this totally optical system is an excellent tool for: Asset Inventory Collection and Management; Pavement Condition Assessment; Topographic mapping data collection; Engineering quality surveys; and 3D modelling.

This Paper describes how GeoAutomation imagery can be used in mitigating the problems currently associated with As built drawings.

(Readers are encouraged to examine the "Introduction to GeoAutomation" White Paper before reviewing this document.)

The Problem:

The problems with As-Built drawings have been well documented and understood by most Municipal Engineers, Planners and Administrators. They include:

- Never getting them.
- Finally getting them – several months, or years later.
- Getting them and not being sure of their accuracy – with no time to check.
- Drawing backlog of As Builts into the GIS.
- Decreased accuracy by continually redrawing
- Eroded confidence in database – when users see that the As Builts do not reflect reality.

Despite numerous efforts to curb the issues, these problems continue to plague Asset Managers and Planners and GIS Departments.

The Solution:

The solution is simple and effective. Take control of the situation by eliminating the need for the final As Built document, from the Contractor or Consultant, all together. Replace it with a 'virtual' As Built from GeoAutomation imagery. Interim design documents and marked up design documents are continued to be produced as in any construction project.

- Once the construction is reported as complete, imagery collection is done with GPS accuracy (25 cm) – more than enough for the accuracy of any GIS database.
- Imagery is processed and available within 2 to 4 weeks.
- The original design document is then overlain onto the GeoAutomation imagery. The location of all features in the design document is compared to the actual final completed construction imagery.

- Changes are made directly into the GIS through the GeoAutomation plug-in and incorporated into a new drawing, creating the final As Built.
- Document comparison between original design and final As Built can easily be made and quantified, as required.
- The final As Built can be in your GIS database within 4 weeks of project completion.

Click on the following link to see a couple of short movies illustrating the above.

http://blip.tv/file/4633611/

http://blip.tv/file/4633587/

With GeoAutomation imagery:

- You determine the timetable and resources allocated to get the final As Built data into the GIS database.
- Redraws are kept to the minimum – two.
- Database users can verify the final As Builts themselves by reviewing the imagery, providing the much needed confidence in the database.
- As the GeoAutomation imagery coverage is always much more than the As Built construction area, additional database verification and mapping can be accomplished with the same imagery.

About McElhanney Consulting Services Ltd.

For over 100 years, McElhanney has provided innovative engineering solutions to municipal, provincial, federal, transportation, and construction clients. With offices in BC, Alberta and Indonesia, we are a multi-discipline consulting firm, offering a complete range of integrated services to answer all your engineering, surveying, planning, mapping and environmental needs.

McElhanney – proud of our success. Proud to help build our communities.

For additional information on GeoAutomation from McElhanney please contact:
Paul Currie,
Business Development Manager, Mobile Mapping
(o) 604 - 694-2259
(c) 604-812-7603
pcurrie@mcelhanney.com
Or visit: http://www.mcelhanney.com/mcsl/products/geoautomation.php

Additional White Papers on GeoAutomation from McElhanney:

- Introduction to GeoAutomation
- Asset Inventory and Topographic Data Collection
- 3D Modeling
- Engineering Survey
- Pavement Condition Assessment
- Virtual As-Builts